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SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE
OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE

FRIDAY, OCTOBER 4, 1907

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ON THE CHEMICAL CHARACTER OF THE PROCESS OF FERTILIZATION AND ITS BEARING UPON THE THEORY OF LIFE PHENOMENA¹

I

THERE may be a difference of opinion as to whether or not it will ever be possible to produce living matter from inanimate; but I think we all agree that we can not well hope to succeed in making living matter artificially unless we have a clear conception of what living matter is. Living organisms have the peculiarity of developing and reproducing themselves automatically, and it is this automatic character of reproduction and development which differentiates them, for the time being, from machines made of inanimate matter. Hence the answer to the question of what living matter is will have to be an answer to the question what determines the phenomena of automatic development and reproduction. Since all life phenomena are ultimately purely chemical, the answer must consist in pointing out one or more series of definite chemical reactions, for which it can be proved that they are identical with the phenomena of development and self-perpetuation. It always seemed to me that the natural starting point for a search after this definite chemical reaction or series of reactions was the analysis of that process which causes the resting egg to develop into an embryo, namely, the process of fertilization.

¹ Address delivered at the International Zoological Congress at Boston, August 22, 1907.